PROMOTING AGRIBUSINESS LINKAGES (PAL)

FISHERIES SUB-SECTOR
(Scoping Study - Fisheries Subsector in South Africa)

FINAL

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1. INTRODUCTION

The fisheries subsector in South Africa encompasses two main types of activities, the aquaculture (these include the fresh water and the marine fish culture) and open sea fishing. The main difference between the aquaculture and the open sea fisheries lies in the fact that the former grows the resource in a controlled environment that it then harvests and the latter harvest a natural resource. The open sea fishery is quite regulated with a process of allocating fishing rights and quotas to different businesses and individuals for a specific period. Some parts of aquaculture are regulated with permits to allow individuals and businesses to produce specified species of fish that are also regulated for natural resource.

The main objective of this study is to find out the information that is already available pertaining to this sector and at the same time to provide clarity on the organization of open sea and aquaculture components fisheries subsector.

The specific objectives of the study, as outlined in the Terms of Reference, are to:

- Determine the characteristics that differentiate enterprises that are given the rights and quotas to fish each of the 19 different species on the Department of Environmental Affairs and Tourism (DEAT) Marine and Coastal Management's (MCM) fishing license lists;
- Identify who has the rights and quotas for each species and the functions that each owner actually carries out ;
- Describe the process and requirements to get open sea fishing rights, licenses, and quotas;
- Describe the process and requirements to get permits for aquaculture;
- Identify the different types of enterprises that are involved in the subsector;
- Identify the functions of the value chain, from production up to the markets;
- Identify the main markets by type and location served by enterprises catching each different kind of species of fish;
- Identify where indigenous communities are involved in open sea fishing (physical location from Northern Cape, Western Cape, Eastern Cape, and KwaZulu-Natal) and the types of species they are allowed;
- Identify the needs for further research that will be of value to Promoting Agribusiness Linkages (PAL) to enable it to develop a strategy for working with historically disadvantaged fisheries enterprises; and
- Identify key public and private sector service providers.

It is important for the reader to note that this study is neither a technical study of the fisheries sector nor is it an economic survey or a full subsector analysis study. Rather the study is meant to provide PAL members of staff and other interested parties with a better understanding of the sector and its value chain as well as the regulatory process that governs the sector. The main objective of the study ultimately, is to identify opportunities

for intervention by PAL to develop and assist the Historically Disadvantages Enterprises (HDEs).

The report consists of seven sections, immediately after the introduction, section two focuses on the methodology applied, followed by an overview of the marine fisheries sub-sector in section three. Section four of this study looks at the overview of the aquaculture fisheries and section five discusses the markets. Section six focuses on the sub-sector maps, with discussions on the functions, participants and channels within the fishery subsector. In section seven, the study highlights the constraints and opportunities in the fishery subsector. The study concludes with recommendations in section eight.

2. METHODOLOGY

The brief from the client requested that the study focus on already published documents and studies. The study relied heavily on secondary information from documents and studies sourced through the internet and from key experts in the fisheries sub sector. The most important sources applied in this study are the fishery policies, the study by Rhodes University on behalf of Marine and Coastal Management (MCM), the study by Letsema on behalf of Trade and Investment South Africa (TISA) and a report by Stellenbosch University. Primary information was also collected through interaction with some of the fishing companies in the Western Cape.

3. OVERVIEW OF THE FISHERIES SUB-SECTOR IN SOUTH AFRICA

South Africa has a coastline of some 2798 km, extending from the Orange River in the west, on the border with Namibia to Ponta do Ouro in the East, adjacent to Mozambique. The western coastal shelf is believed to be highly productive while the east cost is considerably less productive but has high species diversity, including both endemic and IndoPacific species (FAO, 2001). The living marine resources of South Africa have been exploited for many centuries, there are some evidence of abalone having been exploited 125 000 years ago (DEAT, 1997). By the 1960s, catches in several South African fisheries had exceeded sustainable yields and there were sharp declines in some key stocks, prompting initiatives to improve the scientific standard and base for management of the major fisheries.

Fishery is a relatively small sector within the national economy of South Africa. The value of the entire South African fishing industry was estimated to generate approximately R2.78 billion in 1999 (Karaan and Rossouw, 2004). Thus the overall contribution to the national GDP is less than 1 percent. This includes both the marine and the aquaculture fisheries. The Western Cape is the centre of the industrial fisheries and in areas such as Saldanha Bay and St Helena Bay is the dominant employer. Other major centres where fisheries related employment and income generation is important includes Cape Town, Mossel Bay and Port Elizabeth. Traditionally fisheries have contributed significantly to the livelihoods of coastal communities, extending from the Port Nolloth on the West Coast to the KwaZulu-Natal coastline.

3.1 Marine Fisheries

The Department of Environmental Affairs and Tourism allocated fishing rights to approximately 5 837 individuals and companies around the South African coast between 2001 and 2003. Some of these rights as noted by DEAT (2003) are subsistence rights that allow fisheries to make a living from inshore resources such as rock lobster or oysters, other are commercial rights that enable the industrial fleets to catch and process high quality fish products for domestic and international markets. South Africa's most valuable fishery commercially is the demersal fishery, which is conducted by three separate fishing sectors. The western cape based deep-sea trawlfishery, which is the largest followed by the south cape based inshore trawlfishery, then the mid-water trawlfishery, which is linked to the deep-sea sector. The above fisheries together with the longline hake, west coast and south coast rock lobster, pelagic and abalone fisheries are managed by means of Total Allowable Catch (TAC). The TAC is the absolute amount, in terms of whole mass of the resource that may be harvested from the marine environment in a given period (usually a year) (DEAT, 2003).

The deep-sea trawlfishery targets the Cape hakes *Merluccius paradoxus* and *M. capensis*, whilst the inshore fleets targets the shallow Cape hake *M. capensis*. The deep-sea

trawlfishery is restricted to fishing waters deeper than 120m whilst the inshore trawlfishery operates along the south coast and mostly comprising of small side trawlers working in waters shallower than 110m on the Agulhas Bank. The inshore trawling fleet does not fish in waters deeper than 120m. The midwater trawl fishery targets exclusively the adult horse mackerel, which are also caught by the inshore deep-sea trawl fisheries.

The pelagic fishery is the largest in terms of volume landed in South Africa. Most vessels are purse-seiners and operate on the south-west and Cape coasts. There is also a small landed-based net fishery in KwaZulu-Natal and a single purse-seiner operating from Port Elizabeth (Booth and Hecth, 2000). Despite being the largest in terms of volume landed, the unit value of the catch of the pelagic fishery is low compared to the demersal trawlfishery. Catches in the pelagic fishery are highly variable and in addition, there is an interaction between the catches of anchovy (*Engraulis capensis*) and pilchard (*Sardinops sagax*). Pilchard was historically the dominant fish harvested and processed by the canning industry.

South Africa's commercial rock lobster fishery is based on two species, the south coast rock lobster (*Palinurus gilchristi*) on the south cape coast and the west coast rock lobster (*Jasus lalandi*) on the west Cape coast (DEAT, 1997). The latter is caught inshore by traps and hoopness deployed from small vessels and it is also harvested by recreational divers, and the former is a deep water species caught by means of linglines of traps set by larger freezer vessels. An experimental deep-water longline trap fishery for the Natal spiny lobster (*Palinurus delagoae*) has also been initiated in 1994 to determine the potential of a substainable fishery.

3.1.1 World Production[1]

In 2002, world total fishery production was reported to be 133 million tons, of which 41.9 million tons was from aquaculture practices (Vannuccini, 2004). World capture fisheries production amounted to 93.2 million tons, representing a slight increase of 0.4% compared to 2001. The estimated first sale value of the capture fisheries production in 2002 amounted to some US$ 78 billion.

Marine capture fisheries production in 2002 was 84.5 million metric tons. The Northwest pacific was still the most productive marine fishing areas, with a share of 25.4% of the total capture fisheries production in marine waters. In 2002, according to reported statistics (see table 1 below), China was the leading producing country with 14.3 million tons, followed by Peru (8.7 million tons), United States (4.9 million tons), Japan (4.4 million tones), Chile (4.3 million tons) and Indonesia (4.2 million tons).

[1] Information and data on this section was largely sourced from the Food and Agriculture Organisation working papers and the University of Stellenbosch Report on fisheries

Table 1: Top 20 producer countries in (tons)

Marine fishing areas		
Country	**2001**	**2002**
China	14 379 457	14 305 218
Peru	7 950 450	8 737 025
United States	4 914 758	4 914 758
Japan	4 651 652	4 382 157
Chile	3 979 140	4 271 475
Indonesia	3 963 422	4 189 444
Russian Federation	3 422 029	3 023 773
India	2 801 689	2 957 157
Norway	2 686 733	2 742 614
Thailand	2 729 974	2 715 716
Iceland	1 980 555	2 129 495
Philippines	1 813 181	1 899 661
Korea, Republic of	1 984 751	1 663 289
Denmark	1 510 362	1 441 991
Mexico	1 306 640	1 368 006
Viet Nam	1 357 023	1 358 800
Malaysia	1 231 287	1 272 105
Taiwan	1 004 608	1 042 157
Myanmar	931 492	1 008 113
Canada	1 014 403	973 998
Sub-Total	65 431 606	66 389 556
Share of Sub-total/world	77.70%	78.60%
World Total	84 163 995	84 452 487

Source: FAO, Fishery Information (2004)

3.1.2 South African Production

Table 2 below provides information on South African catches, landings and value in 1999. The total value of the South African fishing industry was R2.78 billion in 1999 and accounted for about 0.5% of total world production (Wesgro), cited by (Karaan Rossouw, 2004). Demersal trawl contributes almost 50% to the value of the industry, followed by pelagic (19.5%) and line fish (11.4%). Oysters are the smallest industry contributing less than 0.05% to the total value of the fishing industry. In terms of mass almost 70% of landings is pelagic, but it contributes only 19.5% to the total value. Demersal trawl contributes almost 50% to total value, but represents only 22.3% of total landings.

Table 2: South African catches, landings and values, 1999

Fishery	Catch	Landings	Value	% of total value
	(tons)	(tons)	(R'000)	
Demersal: Offshore trawl	157 449	110 526	1 271 049	45.7
Demersal: Inshore trawl	15 150	10 492	86 873	3.1
Total demersal trawl	172 599	121 018	1 357 922	48.8
Purse Seine (Pelagic)	375 370	375 370	541 699	19.5
SC rock lobster	920	428	111 217	4
WC rock lobster	1 791	1 791	187 799	6.8
Crustacean Trawl	433	433	15 918	0.6
Line fish	24 094	24 094	316 701	11.4
Demersal longlining	7 273	6 611	85 659	3.1
Abalone	482	482	77 120	2.8
Miscellaneous	6 891	6 891	28 997	1
Oysters	55	55	1 342	0
Mariculture	2 631	2 631	47 134	1.7
Seaweed	2 202	2 202	10 425	0.4
Total	**594 741**	**542 006**	**2 781 933**	**100**

Source: Fishing Industry handbook (2003), cited by Karaan and Rossouw (2004)

3.1.3 Trade

Markets for fish and fish products are becoming increasingly lucrative at a global level as dietary shifts in middle to high income market segments progressively favour seafoods. It is therefore increasingly a sellers market. In 2002, world imports of fish and fishery products were US$ 61.4 billion (on a c.i.f basis). 82% of the total world fishery import value was concentrated in developed countries, in particular in Japan, the United States of America (USA) and in the European Union (EU) countries. Japan was again the main importer accounting for about 22% of total world import value. The USA, besides being the world's fourth largest exporting country, was the second main importer, with a share of 16%. Total EU imports represented 35% of world import value.

In 2002, total world exports of fish and fishery products were US$ 58.2 billions in value terms (on a f.o.b basis). China was the world's largest exporter of fish and fishery products with a value of US$ 4.5 billion. Table 3 below shows the top 20 importers and exporters of fishery commodities.

Table 3: Top 20 importers and exporters of fishery commodities (US$ 1000)

Imports			**Exports**		
Countries	**2001**	**2002**	**Countries**	**2001**	**2002**
Japan	13 453 375	13 646 050	China	3 999 274	4 485 274
USA	10 289 325	10 065 328	Thailand	4 039 127	3 676 427
Spain	3 715 332	3 852 942	Norway	3 363 955	3 569 243
Italy	3 055 859	3 206 511	USA	3 316 056	3 260 168
France	2 716 373	2 906 007	Canada	2 797 933	3 035 353
Germany	2 349 088	2 419 534	Denmark	2 660 563	2 872 438
United Kingdom	2 236 944	2 327 559	Viet Nam	1 781 385	2 029 800
China	1 787 242	2 197 793	Spain	1 844 257	1 889 541
Korea, Republic of	1 626 906	1 861 093	Chile	1 939 295	1 869 123
Denmark	1 733 545	1 805 598	Netherlands	1 420 513	1 802 893
China, Hong Kong	1 768 439	1 766 128	Taiwan	1 816 865	1 663 821
Canada	1 371 517	1 353 553	Indonesia	1 534 587	1 490 854
Netherlands	1 231 086	1 333 131	Iceland	1 270 493	1 428 712
Belgium	1 000 296	1 064 299	India	1 238 363	1 411 721
Thailand	1 019 176	1 042 103	Russia	1 528 022	1 399 369
Portugal	934 922	947 483	United Kingdom	1 306 042	1 353 123
Sweden	731 570	804 437	Germany	1 035 359	1 156 911
Norway	653 927	631 475	France	1 018 843	1 088 572
Australia	516 620	553 783	Peru	1 213 112	1 066 654
Singapore	475 667	498 370	Korea, Republic of	1 156 132	1 045 672
Sub-total	***52 667 208***	***54 283 177***		***40 280 176***	***41 595 669***
Share of Sub-total/world	*88.60%*	*88.30%*		*71.70%*	*71.50%*
World Total	**59 421 172**	**61 445 613**		**56 194 631**	**58 211 139**

Source: FAO, Fishery Information (2004)

South Africa is a net-exporter of fish products and the main export destinations include European countries like France, Germany and Belgium, African states like Angola, Zimbabwe and Mozambique, and Canada, Australia, Hong Kong, Singapore and Taiwan (Wesgro) cited by (Karaan and Rossouw, 2004).

South Africa imported fish with a total value of R496 million in 2002 and exported R3.3 billion. Figure 2 below indicates a clear upward trend in the value of exports, but this sharp increase may largely be due to the weakening of the rand during that time. Figure 1 also shows an increasing trend in the mass of fish exports, but not to the same extent as the growth in value (see figure 2). Table 4 illustrates this point. The mass of fish exports increased with only 2% in 2001, but the value increased with 30%. Also, the mass increased with only 8% in 2002, but the value increased with 36%.

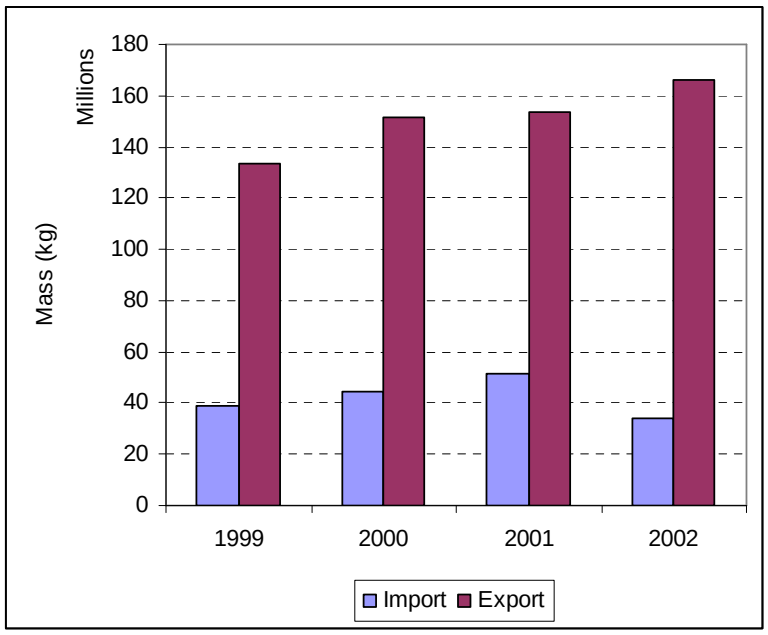

Figure 1: South Africa fish trade in mass: 1999-2002
Source: Fishing Industry Handbook, (2003), cited by Karaan and Rossouw (2004)

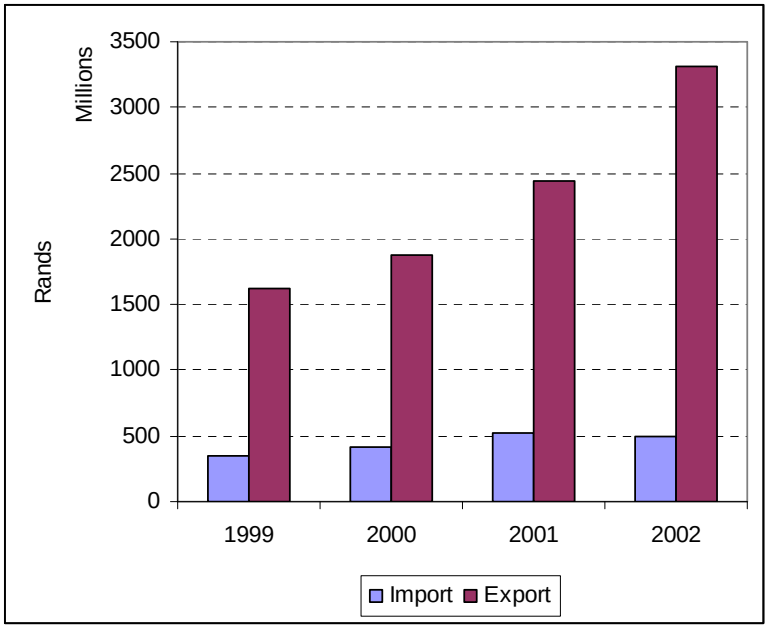

Figure 2: South Africa fish trade in rands: 1999-2000
Source: Fishing Industry Handbook, (2003), cited by Karaan and Rossouw (2004)

Table 4: Growth in imports and exports: 2000-2002

	Import		Export	
	Mass (kg)	Rands	Mass (kg)	Rands
1999-2000	14%	17%	14%	16%
2000-2001	17%	28%	2%	30%
2001-2002	-34%	-6%	8%	36%

Source: Fishing Industry Handbook, (2003), cited by Karaan and Rossouw (2004)

Table 5 shows the composition of exports and imports for 2002. Frozen fish, excluding fillets, comprises 37.5% of total export mass, followed by fish fillets and cutlets (17.6%), fish meal (14.6%) and fresh fish (13.8%). Live fish and sponges represents less than 0.02% of total export mass. 24.4% of the total value of exports are fish fillets and cutlets, 20.6% frozen fish (excluding fillets), 15.8% fresh fish and 14.7% molluscs. Live fish and products of fish, crustaceans and molluscs represent approximately 0.05% of the total value of exports

The majority of fish (in mass terms) imported in 2002 is frozen fish, excluding fillets (35.9%), molluscs (23.3%) and preserved fish (21.7%). Sponges and products of fish, crustaceans and molluscs represent a very small proportion of imports (less than 0.05%). In rand terms, preserved fish comprises 34.3%, followed by crustaceans (19.3%) and molluscs (14.1%) and again products of fish, crustaceans and molluscs represents less than 0.05%.

Table 5: Composition of South Africa trade for 2002

	Import	**Import**	**Export**	**Export**
	Mass (kg)	**Rands**	**Mass (kg)**	**Rands**
Fish Live	97 533	6 845 745	20 390	1 248 359
Fish fresh, chilled	339 421	9 675 955	22 940 595	521 512 414
Fish frozen (excl fillets)	12 211 766	58 394 745	62 363 375	680 906 075
Fish fillets, cutlets	614 579	9 657 966	29 280 809	808 836 385
Fish dried, salted, brined, smoked	278 460	15 609 317	2 471 332	45 421 144
Crustacea	2 186 371	96 021 165	2 556 245	470 190 306
Molluscs	7 922 177	70 054 373	8 827 014	486 365 768
Coral, shells	26 917	813 021	158 157	963 699
Sponges	8 003	354 423	8 483	4 469 230
Products of fish, crustacea, mollusks	3 319	182 577	113 740	483 225
Fats, oils of fish, marine mammals	316 986	3 668 735	875 041	3 403 867
Prepared, preserved fish	7 373 270	170 480 416	12 313 270	121 429 338
Prepared molluscs, aquatic invertebre	1 377 112	48 135 637	133 078	36 435 157
Fish meal	1 215 766	6 490 825	24 257 253	126 489 331
Total	**33 971 680**	**496 384 900**	**166 318 782**	**3 308 154 298**

Source: Fishing Industry Handbook, (2003), cited by Karaan and Rossouw (2004)

3.2 The Regulation of the Fisheries Sub-sector in South Africa

The introduction of the democratic order in South Africa required the redrafting of most Acts of parliament to promote the goals of social equity and redress of the consequences of past racial discrimination. The fishing industry is no exception, the Marine Living Resources Act 18 of 1998 (the MLRA) is the primary vehicle for the promotion of transformation. The purpose of the MRLA is to provide for the orderly exploitation of marine living resources, and for these purposes to provide for the exercise of control over marine living resources in a fair and equitable manner to the benefit of all the South African citizens (MCM, 2004). The introduction of MLRA required the State to "restructure the fishing industry to address historical imbalances and to achieve equity within all branches of the fishing industry" (ESS, 2003).

The focus of restructuring was a series of annual fishing rights allocation processes whereby fishing quota was distributed away from historically white, larger companies to smaller scale operators (SMMEs). This process was challenging, as it resulted in a number of legal challenges for the Government thereby delaying the whole process. Appeals were made by those denying access to the resources and by those who felt that too much had been taken away from them. A team, including contracted administrative and legal members was put together to implement a new plan for the 2001 application process (Karaan and Rossouw, 2004). Under the dispensation that was introduced by the MLRA, the Minister called for all South Africans who wished to gain access to the country's commercial fisheries to make a formal application for fishing rights. After an exhaustive and rigorously applied process of elimination, successful applicants were awarded medium term (four years) rights as opposed to one year rights, in preparation for awarding long term rights (8-10 years) in 2005.

3.2.1 Allocation of Fishing Rights[2]

Since 2000 the Department of Environmental Affairs and Tourism has endeavoured to put a rational and credible rights allocation system in place, with the purpose of re-establishing stability in the South African fishing industry and realistically addressing the issue of black economic empowerment. Below are the steps and procedures taken for the allocation of fishing rights.

Step 1:
Prior to the expiry of existing rights, the Minister of Environmental Affairs and Tourism calls for applications for fishing rights by announcing the opening of the rights application process in the Government Gazette.

Step 2:
Application forms and policy guidelines are made available at the coastal offices of the Department. The policy guidelines broadly describe the criteria that are used by the decision-makers.

[2] This is extracted from the DEAT report on Transformation and the South African Fishing Industry.

Step 3:
Applications are submitted to the Rights Verification Unit with the application fee.

Step 4:
An independent Advisory Committee assesses each application in accordance with written instructions issued by the decision-maker.

Step 5:
The Advisory Committee presents written comments and scoring to the Minister's delegate who makes a decision after carefully considering the score sheets and comments from the Advisory Committee and the application forms.

Step 6:
Applicants are informed by mail whether their application was successful or not. The Minister's delegate announces the names of successful applicants in each fishery.

Step 7:
The Record for Decision is made available at the coastal offices of the Department. The Record provides reasons why applications were accepted or rejected.

Step 8:
Successful applicants apply for fishing permits and vessel licences.

Step 9:
Unsuccessful applicants decide whether to appeal. A portion of the total allowable catch in each fishery is reserved for appeals against decision of the Minister's delegate. The Minister is personally responsible for allocating the quantum that is reserved for the appeal process.

The applicants are required to satisfy the following conditions when applying:

- significantly be transformed in respect of both ownership and management
- are not fronts for other companies
- have immediate access to a suitable vessel(s) and to the capital required to finance a specific fishery operation.

Table 6 below shows the allocation of right under the medium-term rights allocation and the percentage of SMMEs within the right-holders.

Table 6: Rights allocation

Fishery	No. of right-holders (medium-term)	% of SMMEs	Landed Value/annum
Hake Deep-Sea Trawl	53	42%	R1.4 billion
Hake Inshore Trawl	16	69%	R16 million
Hake Longline	207	80%	R130 million
Hake Handline	86	100%	R110 million
Horse Mackerel	21	-	R55 million
Pelagics	113	85%	R800 million
Traditional line	2496	-	-
Prawn Trawl	5	-	R21 million
South coast rock lobster	18	65%	R100 million
West coast rock lobster	234	-	R200 million
Patagonian toothfish	5	-	-
Seaweed	14	50%	-
Squid	128	100%	R180 million
Demersal shark	11	-	R1.3 million(1995)
Tuna pole	152	-	-
Oysters	34	-	-
White mussel	7	-	-

Source: Sectoral Policies, (DEAT, 2005)

3.3 Sectoral Overview[3]

3.3.1 Deep Sea and Inshore Hake Trawl

The **deep-sea trawl fishery** is South Africa's most important and financially lucrative fishery and it is concentrated in the Western Cape and operates mainly out of Cape Town and Saldanha Bay. Until 1978, the deep-sea fishery was largely unregulated and participants were not restricted to any maximum fishing limits. Since 1978 the hake trawl fishery has been managed in terms of an annual TAC. Between 1978 and 2004 the TAC fluctuated between the levels of 140 000 tons (1979) and 155 000 tons (2004). The deep-sea hake fishery has changed substantially over the years. In 1992, only 21 predominantly white owned and controlled companies had rights to utilize the deep-sea hake resource. By 2002 the number had reached 53 right-holders. In 1992, the five largest companies in the fishery controlled 92 percent of the TAC and in 2004; they shared less than 75 percent of the TAC. In 1992 the smallest quota was 50 tons and the largest was 53 000 tons. Ten years later the smallest quota was 336 tons and the largest was 45 000 tons.

[3] Information in this section is largely sourced from the Draft policies of commercial fishing rights and an Economic and Sectoral Study of the South African fishing industry report.

The hake deep-sea trawl is extremely capital intensive fishery. The existing participants have made substantial investments in vessels as well as processing and marketing infrastructure. The total value of assets in the fishery is estimated to exceed R700 million. The market value of the landed catch is worth approximately R1.4 billion annually. The hake deep-sea trawl fishery sustains about 8 800 direct jobs, and of these jobs 90 percent are held by persons from historically disadvantaged communities. The deep-sea hake fishery thrives on the presence of large companies, which in turn prosper because of the vertically integrated nature of their catching, processing and value-adding, marketing and local and international distribution components. It was estimated that about 42% of the companies active in the deep-sea hake fishery were classified as SMMEs in 2002 (DEAT, 2003).

The ***inshore trawl fishery*** has a significantly shorter commercial history than the deep-sea trawl fishery and it is based mainly in Mossel Bay and Port Elizabeth, where it makes a significant contribution to the local communities. The inshore trawl fishery targets the Cape hakes as well as the Agulhas sole. The inshore trawl fishery was largely unregulated until 1978 when participants were not restricted to a maximum catch limit. Since then, fishery has been managed in terms of a TAC.

The introduction of the TAC resulted in too many participants competing for limited inshore resources. By 1992 only 11 large companies operated 35 trawlers in the fishery. The number of rights-holders remained constant until 2000, when new entrants were granted access to the inshore fishery. By 2004, 16 right-holders were active in the inshore fishery. The medium-term rights allocation records show that the inshore trawl fishery is currently 50 percent black owned and of the companies that hold rights, 69% are SMMEs. Thirty-seven percent of the hake TAC and 46 percent of the sole TAC is held by black-owned companies as compared to 1 percent in 1992.To accommodate new entrants in this fishery, the average quota allocation decreased from about 900 tons in 1992 to 600 tons in 2002 and the sole allocations were reduced from an average of 80 tons to an average of 50 tons per right-holder. The inshore trawl fishery sustains some 1100 direct jobs.

Allocation of Rights

When allocating rights in the deep-sea hake fishery, the Department recognized the high level of capital required to participate in this fishery, the need to stabilize the fishery and he need to protect 8 000 jobs, as well as the large investment already made by existing right-holders in both the deep-sea and inshore trawl fisheries. Currently the right-holders for deep-sea and inshore trawl fishery stands at 53 and 16 respectively and the Departments anticipate that no additional applicants will be allowed to enter. However, current right-holders that have not effected the transformation objectives to which they committed themselves in their respective medium term right applications and that have not invested or become involved in the fishery over the medium-term period may be replaced with a suitable new entrants. The new entrant applications will be granted rights if they:

- Are significantly transformed in respect of both ownership and management
- Are not fronts for other companies

- Have immediate access to a suitable vessel(s) and to the capital required to finance a hake deep-sea trawl operation (in the case of deep-sea trawl fishery) and a hake inshore and sole trawling (in the case of inshore trawl fishery)

3.3.2 Hake Long Line

Longlining for desermal species was introduced in South Africa in 1982 with the aim of targeting hakes. Between 1985 and 1990 much of the long line activity was redirected from hake to kingklip as the latter was significantly more valuable. The longline fleet operates from a number of harbours, extending from Port Nolloth in the Northern Cape to Port Elizabeth in the Eastern Cape. The fishery operates in offshore and inshore waters. Inshore hake longlining is restricted to the use of no more than 4 000 hooks per line. Offshore longlining may only take place in depths greater than 110 metres and is restricted to the use of no more than 20 000 hooks per line.

The hake longline fishery was identified in 2001 as a fishery that was ideally suited for the empowerment of small and medium enterprises and historically disadvantaged fishers. In 2002, the hake longline TAC of 9 825 tons was allocated to 115 rights-holders. The historically disadvantaged individuals' control 90 percent of the TAC and 80 percent of the right-holders are small and medium sized enterprises. Longline fishery is not a highly capital intensive fishery, rather it is a labour intensive fishing with little land-based value-adding occuring. Most of the hake is exported in gutted form on ice and kingklip remains a valuable by-catch component of the fishery. The hake longline industry employs approximately 3 600 permanent workers.

3.3.3 Hake Handline

The hake handline fishery developed along the southern Cape coast where, in the late 1980s traditional linefisheries began targeting hake as demand for prime quality hake increased on the international market. The hake handline fishery operates out of small fishing harbours and slipways along the southern Cape and Eastern Cape coasts as far as Port Alfred. The fishery operates in inshore waters targeting shallow water hake.

In 2003, the Department allocated 86 commercial hake handline fishing rights. The rights authorized 86 vessels and more than 700 crew to target hake using the handline method. This was the first time that commercial fishing rights were allocated in this fishery and also subjected to regulation. Of the rights allocated, 26 percent were allocated to blacks. Most of the right-holders are individuals; legal entities such as close corporations make up a small percentage of the right-holders. All the right-holders in the fishery could be described as small and medium sized enterprises. Many previously disadvantaged individuals fishers are from the local communities.

3.3.4 Horse Mackerel

The horse mackerel resource is harvested mainly by targeted mid-water trawling and it is found along the entire South African coast, but the largest concentrations of adult fish are

found on the Agulhas Bank. Horse mackerel was mostly caught by foreign fleets in the 1970s, but these fleets withdrawn from the South African waters in 1978. The first quota was allocated in1990 with the formation of South African Midwater Trawling Association. The quota was allocated to 9 companies, allowing each vessel to catch 2000 tons. In 2001, medium-term rights for targeted mid-water trawling were allocated to 21 companies of which 5 were new entrants.

The horse mackerel fishery employs approximately 50 persons on board one midwater trawler. Horse mackerel is transshipped and exported without landing and processing in South Africa. There is very little local demand.

3.3.5 Traditional line

The traditional line fishery developed in the Cape region and later in the Kwa-Zulu Natal region. The Cape commercial line fshery, which is responsible for 95% of the South Africa linefish catch consists of about 2 500 vessels, which operates between the Orange River in the Northern Cape and the Kei River in the Eastern Cape. The Kwa-Zulu Natal commercial line fishery operates from the Ponto do Ouro in the north to Port Edward in the south.

The traditionally line fishery is a boat-based activity and currently consists of 3450 crew operating from about 450 commercial vessels of between 4.5m and 15m in length. The vessels use handline or rod-and reel to target approximately 200 species of marine fish along the full 3000 km coastline. Of which 50 species may be regarded as economically important. The Department will not allocate additional fishing rights in this fishery. Almost all of the traditional line fish catch is consumed locally.

3.3.6 Pelagic

The pelagic fishery is the largest by mass of fish landed in South Africa, and the second most important in terms of value. The pelagic fishery consists of two primary target species, sardine/pilchards and anchovy. The small pelagic targeting occurs inshore, primarily along the Western Cape's west and south coasts (anchovy and sardine) and the Eastern Cape coast (sardine). The sardine/pilchards are canned for human consumption while anchovy are reduced to fishmeal, fish oil and fish paste.

The fishery is capital intensive, with right-holders having to invest in vessels and processing and marketing infrastructure or gain access to catching and processing agreements. In 1990 the government allocated an average catch right of 4 000 tons to boat based on a TAC of 300 000 tons. The pilchard allocations were granted to 12 companies in 1990, and by the year 2000 the number of rights-holders increased to 107. The number of right-holders for anchovy was 10 in 1990 and increased to 51 in 2000. In 2001 and 2002, the Department allocated 113 medium-term commercial pelagic fishing rights and of these, 73 percent were allocated to black-owned entities and 85 percent of right holders are small medium enterprises.

The pelagic industry supports 8 fishmeal plants, 6 canning factories, more than 40 bait packing facilities and employs approximately 7 800 people, of which 5 300 are permanent.

3.3.7 Prawn Trawl

The prawn trawl fishery is based in KwaZulu-Natal and consists of inshore fishery (5 to 40m depth) on the Tugela Bank and St Lucia and in offshore fishery (100 to 600m depth) extending from Cape Vidal in the north to Amanzimtoti in the south. The inshore trawling is seasonal, with good catches made between January and March off St Lucia and from March to September on the Tugela Bank. The offshore trawling takes place year round. The trawler with inshore permits is entitled to also trawl in the offshore grounds, but not visa versa, therefore trawlers which possess the inshore permits will generally leave the inshore grounds to fish on the offshore grounds when inshore catches are not economically viable.

Targeted catches on the Tugela Bank are dominated by the white prawn, which contributes in excess of 80% of the prawn catch. The balance is mostly made up by the brown prawn and the tiger prawn. Catches on the St Lucia ground are dominated by white prawns and the bamboo prawn. Apart from the tiger prawn, the prawns are not separated by species when they are packed. The offshore fishery targets several species of crustaceans. The pink prawns comprise over half the targeted catch and the red prawn is also of importance.

Catches are size-sorted, graded, packed and blast-frozen at sea. Little value is added on land. Modest shore-based infrastructure, including berthing, re-packaging, storage and marketing facilities is situated in Durban. In 2001 5 fishing rights were allocated to fishing companies, with a total of eight vessels. Three of these right holders (with five vessels) may fish in both the inshore and offshore fisheries. It is estimated that 22 percent of the right-holders are majority-owned by blacks and the sector employs 150 individuals of whom 88 percent are blacks.

3.3.8 South Coast Rock Lobster

South coast rock lobster (SCRL) is endemic to the southern coast of South Africa, where it occurs on rocky substrata at depths of 50-200m. Commercial fishing occurs between East London and Cape Agulhas and up to 250km offshore along the outer edge of the Agulhas Bank. The specie is important to both the eastern and Western Cape commercial fishing sectors, but its deep-water nature excludes a recreational sector. The fishery was first regulated by a TAC in 1984 and it was set at 450 tons (tail mass). The management strategy for this fishery was later changed in 2000 after realizing that the resource was in decline. A combined TAC and total applied effort (TAE) strategy was introduced, which limited the number of days that a SCRL vessel may stay at sea.

In the 2001/2002 fishing season, the TAC was set at 340 tons, combined with a TAE of 1 922 sea days. In 2004 the TAC increased to 382 tons, combined with a TAE of 2 089 sea

days. The medium-term fishing rights were allocated to 19 right-holders. These consist of established companies with larger rights and of small rights holders, most of which are recent entrants. Of these right-holders, 72 percent are black owned entities and 65 percent are small and medium-sized enterprises.

The fishery is capital-intensive, and the costs of a vessel is approximately R5 million. Operational costs are about several million rands per boat per year. The SCRL catches are off-loaded at Cape Town and Port Elizabeth harbours. The catch is generally frozen at sea and graded and repacked at shore-based facilities. The SCRL industry employs about 400 people. The entire catch is almost exported.

The Department considers the current right-holders and vessels to be the maximum that the fishery can sustain at the moment.

3.3.9 West Coast Rock Lobster

The west coast rock lobster (WCRL) is made up of two distinct sectors, a commercial and recreational fishery. Recreational users may only fish using hoopnets from a boat or the shore or practice breath-hold diving or poling from the shore. Recreational fishers may not sell their catch. The WCRL (offshore) fishery is permitted to catch rock lobster in traps. In the medium-term rights allocation process, right-holders in this fishery were granted allocations of more than two tons each. Right-holders in the WCRL (offshore) fishery use larger, more sophisticated vessels than right-holders in the WCRL (nearshore) fishery, which is restricted to using hoopnets in shallow water.

In the 2001/2002 medium-term rights allocation, the Department allocated 234 full commercial west coats rock lobster fishing right. An additional 511 limited commercial fishing rights were allocated to former subsistence fishers to encourage the development of SMMEs. Of the rights allocated in the full commercial fishery, 66 percent were granted to blacks and black-owned entities. By the end of 2003, the Department had allocated 1 019 commercial rock lobster fishing rights. Of these more, more than 785 were allocated to former subsistence fishers. The average allocation in 2002 was 6.8 tons.

3.3.10 Tuna Handline (Pole)

The South African tuna fishery consists of four distinct fisheries, the tuna sport, the baitboat, the pelagic longline and the foreign pelagic longline fisheries. Different vessels types are used by the recreational sector to target tunas and gamefish in different areas. In the Cape Penninsula area, larger gamefishing craft operating out of Cape Town, Hout Bay, Simonstown and Gordon Bay harbours are used to fish for yellowfin, bigeye, albacore and most recently swordfish. The baitboat fishery targets albacore for canning and by-catch include species such as yellowfin and bigeye tuna. The industry is characterized by a strong seasonal component and low profit margin.

Over the years, three types of vessels have emerged in this fishery. The first were large vessels with onboard refrigeration, capable of spending substantial periods at sea with a

crew of 20 or more. The second type were small vessels that carried less than 20 crew spending no more than one night at sea and keeping tuna on ice. The third type was even smaller vessels, carrying less than 10 crew and using only pole gear.

In 2002, the Department allocated 152 commercial tuna pole fishing rights, thereby authorizing 165 vessels and more than 2 700 crew to target tuna using pole method. Of the rights allocated, 20.5 percent were allocated to blacks or black-owned and controlled entities. Only 29 percent of the right-holders in this fishery are legal entities, the remainder are natural persons or individuals. The vessels used in the industry have an average market value of R4.8 million and a replacement value of R11 million, making entry almost impossible for small new entrants.

3.3.11 Seaweed

Seaweed or kelp harvesting in South Africa is primarily directed at two species of large brown seaweeds. These seaweeds are abundant in the cool, temperature waters between Cape Agulhas and Namibia. The South African coastline is also home to a number of other species of seaweed, and these include the *Gelidium* and *Gracilaria*. The beach-cast kelp is sun-dried, milled and exported mainly for the extraction of alginate. No commercial extraction occurs in South Africa due to strong international competition. Seaweed industry supplies mainly raw material because research and development has not been done to add value to the product.

The seaweed sector is managed in terms of TAE and TAC. Seaweed is harvested on a per area basis. The Department has divided the South African coastline into 23 harvesting areas. Very few right-holders harvest seaweed and add value to it. Currently right-holders harvest seaweed for feed for abalone farms. The recent growth of the abalone farming industry has created further demand for freshly harvested seaweed. In terms of value adding, seaweed is used in specialized health-food products and for cosmetic products. Between 2001 and 2003, the Department allocated commercial seaweed harvesting rights to 13 enterprises. In 1997, the commercial seaweed sector was completely dominated by white-owned and managed enterprises. Presently six out of 13 right-holders are black-owned and managed enterprises.

3.3.12 Squid

Squid used to be caught for bait for sport linefisheries along the southeastern Cape coastline. In 1984 it was first realized that catching and exporting of squid could be a lucrative business. The fishery is currently regulated in terms of TAE. Since 1988, the fishery has been closed once a year for a period of four weeks during October/Novemeber. The squid fleet is divided into vessel categories and the maximum crew complement for the vessels in each category is fixed.

In 2001, the Department allocated rights to 128 commercial squid fishing enterprises, thereby authorizing more than 2 400 crew to fish for squid on 145 vessels. The squid fishery employs approximately 3 000 people and the landed catch is worth more than

R180 million per year. Squid is frozen at sea and it is generally landed at harbours between Plettenbeg Bay and Port Alfred and exported to Europe.

3.3.13 Demersal Shark

The current shark longline fishery targets both pelagic sharks (blue and mako sharks) and demersal sharks by using either surface or bottom set ears respectively. In general the vessels targeting hound sharks are often smaller than those targeting pelagic sharks as the area is restricted to coastal waters. With effect from Janaury 2006, there will no longer be a targeted pelagic shark fishery. Many shark permit-holders hold other permits in sectors such as demersal shark, hake longline and tuna pole.

The number of vessels active in the demersal fishery has fluctuated annually, with the number steadily increasing to 14 vessels in 1999. Only five vessels were active in 2003. Sharks are caught as by-catch in nearly all fishing sectors of South Africa's commercial and recreational fisheries, the only exception being the directed shark-longline sector which includes only 23 rights holders' operators of which some target shark regularly and other irregularly.

3.3.14 Patagonian Toothfish

The harvesting of Pantagonian toothfish has been authorized by South Africa since 1996. Following the promulgation of the Marine Living Resource Act in 1998, the fishery has been regulated as an experimental fishery under section 83. In 1996, the Department issued five experimental permits for the harvesting of Patagonian toothfish within the exclusive economic zones (EEZ) of Prince Edward Islands. The TAC for the 1996/1997 fishing season was set at 2 500 tons. The TAC for the experimental toothfish fishery has declined steadily and was set at 500 tons for 2003/2004 fishing season.

3.3.15 Oysters

The oyster fishery was previously managed as two separate fisheries related to their areas of operation, namely the KwaZulu-Natal coast and the Southern Cape coast. Since 2002 the oyster fishery has been managed as a single national fishery. Under the new management system, four commercial oyster-harvesting areas were officially recognized, namely KZN North, KZN South, Port Elizabeth and the Southern Cape. In KZN (North and South coasts), the management approach previously adopted by the KZN Provincial Government was retained. This entailed maintaining a system of effort limitations whereby the numbers of pickers are restricted and a daily bag limit of 190 oysters per picker per day is enforced. The KZN north and south coasts are further sub-divided into five zones each, which are harvested on a rotational basis. This requires that zones remain fallow for at least three years at a time thereby allowing for recovery of the oyster stock. This system applies to both the commercial and recreational sectors.

The oyster fishery along the Southern Cape coast is not managed by means of rotational harvesting, but by means of limiting the number of pickers, with no daily bag limit. The Southern Cape fishery is controlled by a closed season from 15 December to 05 January,

to limit conflict between holidaymakers and the commercial oyster sector. In Port Elizabeth, no harvesting of the oyster beds is practiced, only washed-up oysters are being collected.

The current TAE for the oyster fishery is set at 145 pickers and is apportioned as follows, KZN North (25 pickers), KZN South (15 pickers), Southern Cape (102 pickers) and Port Elizabeth (3 pickers). In 2002 commercial rights to harvest oysters were awarded to 34 applicants employing a total of 114 pickers.

3.3.16 White Mussels

Commercial harvesting of white mussels is limited to seven areas along the west coast. The total number of white mussel harvested per year has declined since the 1980's, and this has largely been as a result of fishery's lack of economic viability. Currently, commercial right-holders are permitted to collect 2 000 white mussels per month. White mussels are harvested as bait and not for human consumption. A market for human consumption needs to be investigated.

The white mussel fishery is catch and effort controlled. A TAE of seven right-holders, with bag limits of 2 000 per month is enforced.

4. Aquaculture Fisheries[4]

Aquaculture refers to the controlled production of aquatic species for human consumption, industrial use and recreational purposes. Aquaculture is of growing importance to world food resources and trade commodities. Aquaculture can also be distinguished into two types, namely the freshwater culture (production of species in freshwater, e.g trout, crocodiles and catfish) and Mariculture (production of marine organisms in their natural environment, e.g abalone, oysters and seaweed). In 2002, out of the 133 million tons of world fishery production, aquaculture contributed 41.9 million tons (FAO, 2004). In spite of its vast natural and human resources, the participation of Africa in this growing global food and trade sector is disconcertingly lacking. The African continent contributes only 1.2% to global aquaculture production and South Africa less than 1% of African aquaculture production (FAO, 2002) cited by Brink (2003).

Aquaculture developments in aglobal perspective are driven by:

- Market forces;
- Diversification of the economic base;
- Sustainable utilization of resources; and
- A quest for food security.

Aquaculture in South Africa consists mainly of freshwater species such as trout and catfish and marine species such as abalone and prawns. Although its contribution to global production is limited, contributing the aquaculture cluster in South Africa has been growing significantly over last two decades. Since traditional catch fishing methods have been adequate to supply the limited local market aquaculture has not been a national priority, the industry has been kept in its infant stage. However, due to the declining natural resources in the oceans, producers have been forced to look to mariculture to address local demand in the medium to long-term.

Aquaculture is accepted as an environmentally and ecologically sustainable solution to protein supply in South Africa. From an economic perspective, aquaculture is viewed as a commercially viable industry providing export opportunities for SMMEs and larger organisations. In addition, government funded aquaculture initiatives have been successful in providing previously disadvantaged individuals (PDIs), especially in rural communities, with employment opportunities. Due to the labour intensive nature of value adding activities, aquaculture also lends itself to creating or protecting employment in related industries, for example processing.

Despite the immature nature of the industry, there are a number of commercially successful operations farming abalone, mussels, oysters, and prawns amongst other species, showing considerable growth potential in South Africa (Reichardt 1994; Britz

[4] Information under this section is sourced from a report by Letsema on behald of TISA, a report by the University of Rhodes on behalf of DEAT and a report by the Univeristy of Stellenbosch

and Hecht, 1997, Mather, 1999) cited by ESS Report (2003). This study focused on the mariculture production side of the quaculture. The mariculture production in South Africa was estimated to be in the region of 710 tons in 2000, with a value of approximately R45.5 million. About 69% of the total mariculture production in 2000 took place in the Western Cape (ESS Report, 2003)

Below the study presents the sectoral review of species in the mariculture production.

Oysters

The oyster industry has proven to be profitable and has expanded over the last years as observed by (Karaan and Rossouw, 2004). Production was 250 metric tons in 2003 and the value was R1.6 million (Brink, 2003). The Western Cape produce 86% of the total production (Wesgro, 2004), cited by (Karaan and Rossouw, 2004). Oyster production is clustered in the Knysa lagoon, but production also occurs at Saldanha Bay, St Helena Bay, Port Nolloth and St Francis Bay. There are nine producers of which South Cape Oysters in Knysa is the most successful producer (Karaan and Rossouw, 2004).

Most of the oyster farming operators import spat from the United Kingdom or Chile. In 2000, two of oyster producing operators used the rack culture method, three used Japanesse longline technology, two grew oysters in trays in ponds and one reared the oysters in tanks in a pump-shore system (ESS report, 2003)

The marketing of oysters is limited to the local market as South Africa is a net importer of oysters. Due to high production costs in comparison to France and Chile, lack of consistency of supply and the logistics issues involved in transporting live oysters to the EU, Letsema (2002) views South Africa as uncompetitive in the global market.

Mussels

Two permits for mussel Mariculture were awarded by Marine and Coastal Management (MCM) in 2000. The two mussel producers in South Africa produced approximately 1000 tons in 2003 of which 39% go back into the sea for the next production cycle and the remaining 61% is marketed in South Africa. The 61% is distributed as follows: 25% is marketed as fresh mussels, 5% is marketed directly, and 70% is delivered for processing. South Africa is a net importer of mussels as only 45% of consumption in South Africa is produced locally (Diza and Karaan, 2004), cited by Karaan and Rossouw (2004)

Mussel farming is conducted in Saldanha and the Western Cape accounts for 85% (2 000 tons) of cultivated black mussel production in South Africa (Wesgro, 2004) cited by Karaan and Rossouw (2004).

There are several factors making it difficult for small farmers to enter the mussel industry. These factors include:

- High start-up costs and asset specificity;

- Information constraints about technology, production techniques, marketing channels and processing services; and
- Variable size and quality of mussels making it difficult to penetrate niche markets. (Letsema: Aquaculture Sector Study, 2002)

Abalone

The abalone industry was initiated in South Africa in the early 1990s by three fishing companies. By 1996 a number of smaller operators had entered the industry, with the first 10 tons of cultured abalone being produced in 1997. There are 15 commercial abalone farms in South Africa and more sites are investigated (Brink, 2003). A medium size farm produces around 35 tons per annum. Total farm production for 2002 was 500 tons, giving a gross production of R150 million (Aquaculture Sector Study, 2002). Approximately 80% of total abalone production occurs in the Western Cape (Wesgro, 2004) cited by Karaan and Rossouw (2004)

South African abalone is exported to China, where there is a high demand for canned products, and to a limited market in Japan. South Africa exported 70 tons as canned product in 2003, and the rest mainly as live abalone (Brink, 2003 and Gerber, 2004) cited by Karaan and Rossouw (2004)

Key risks in abalone farming include water quality, mortalities and infestations. These risks are minimised by good farm management which requires expertise in abalone farming. Site selection is another important success factor. (Aquaculture Sector Study, 2002)

Prawns

Only one prawn Mariculture permit was applied for in 2000, for a business that operates two farms. The first farm was set up in 1991 on the Amatikulu River estuary, in northern KwaZulu-Natal. The second farm was acquired in 1998 and is located at Mtunzini on the Umlalazi River. The operation consists of fully equipped processing plant, hatchery and laboratory. Prawns branded as Amatikula Prawns, are distributed locally through supermarket chains and exported to the EU.

Seaweed

Four seaweed mariculture permits were requested from MCM in 2000. The total seaweed industry in South Africa is valued at about R18 million and employed around 400 people in 1995 (Aquaculture Sector Study, 2002). Commercial production of seaweed started in 1998 with a production of 16 metric tons. Seaweeds are collected for export and processing and is used as food, food supplements or fertilizer. Most of the seaweed produced is used on the farm as abalone feed.

5. MARKETS

The markets for fish products comprise of both the domestic and international market. In this section, the study presents the markets for various fish products based on the type of fishery.

Demersal fishery
The demersal fishery, which comprises mainly hake, is regarded as the most valuable fishery in South Africa. The products of the deep-sea fleet are landed in three different categories, the fresh fish, frozen H&G and market ready frozen skinned fillet. Most of the frozen skinned fillets are sold directly into the export market (EU, USA and Australia). The fresh fish and frozen H&G go for further processing and sold both domestically and internationally. The entire inshore trawl hake catch is landed as ice fish. The bulk of the catch is processed in various ways and sold into the domestic market. A small portion is exported. The greater portion of the handline and longline caught hake is exported as Prime Quality (PQ) to southern Europe. Prices that quota holders receive within this fishery depending on the agreement one has with the intergrated companies. Prices range from R14 to R22 per kg, depending on the type of agreement one has with the processing and intergrated companies.

Horse Mackerel
Horse mackerel is landed whole and frozen and small amounts are processed in the Headed and Gutted form. Markets are directed at the large volume low value African markets including Central and West Africa. There is very little local demand.

Traditional commercial line fishery
Fish are gutted at sea, kept unchilled on small vessels or on ice in larger vessels and generally marketed whole. Fish are distributed through network of small formal and informal fish buyers and outlets to local fresh fish market in the domestic market. Fish is not marketed internationally; the whole catch is consumed locally.

Pelagic fishery
This is the second most important fishery in South Africa in terms of value. Most of the catch is processed before being marketed. Pilchard is canned for human consumption and Anchovy is converted to fishmeal. Different quota holders get different prices, depending on links with market.

Prawn fishery
Most of the catch is retailed to domestic markets.

South and West Coast Rock Lobsters
The products (frozen lobster tails, whole frozen lobster and live lobster) are exported to the USA, Europe and the Far East. There is also local demand for those products. Quota holders were reluctant to provide information on prices that they receive on their catch. Some of the quota holders we met indicated that they receive R60/kg after transport,

marketing processing costs have been deducted. And those that delivers at the processing companies or intergrated companies receives R68/kg.

The Demersal Shark fishery
Frozen shark meat (trunks only) and dried fins are exported abroad. The main buyers of frozen shark are Australia, Greece and Italy. Other shark species export includes fillets of the soupfin and houndsharks.

Seaweed fishery
Most of seaweed is used on farms as abalone feed.

Mariculture
Abalone is exported mainly to China, where there is a high demand for canned products, and to limited market in Japan.
The scope for oyster exports is limited. The domestic demand exceeds supply.
Prawns, branded as Amatilkula, are distributed locally through supermarket chains and exported to EU.

6 SUB-SECTOR MAPS

Sub-sector analysis centres on a schematic map that describes the economic system of the sub-sector. The map summarizes the economic relationships between various enterprises and other actors in the system. In the following section, the study presents sub-sector map of the fishery industry, which will be followed by discussions on the different participants and their functions within the fisheries sub-sector.

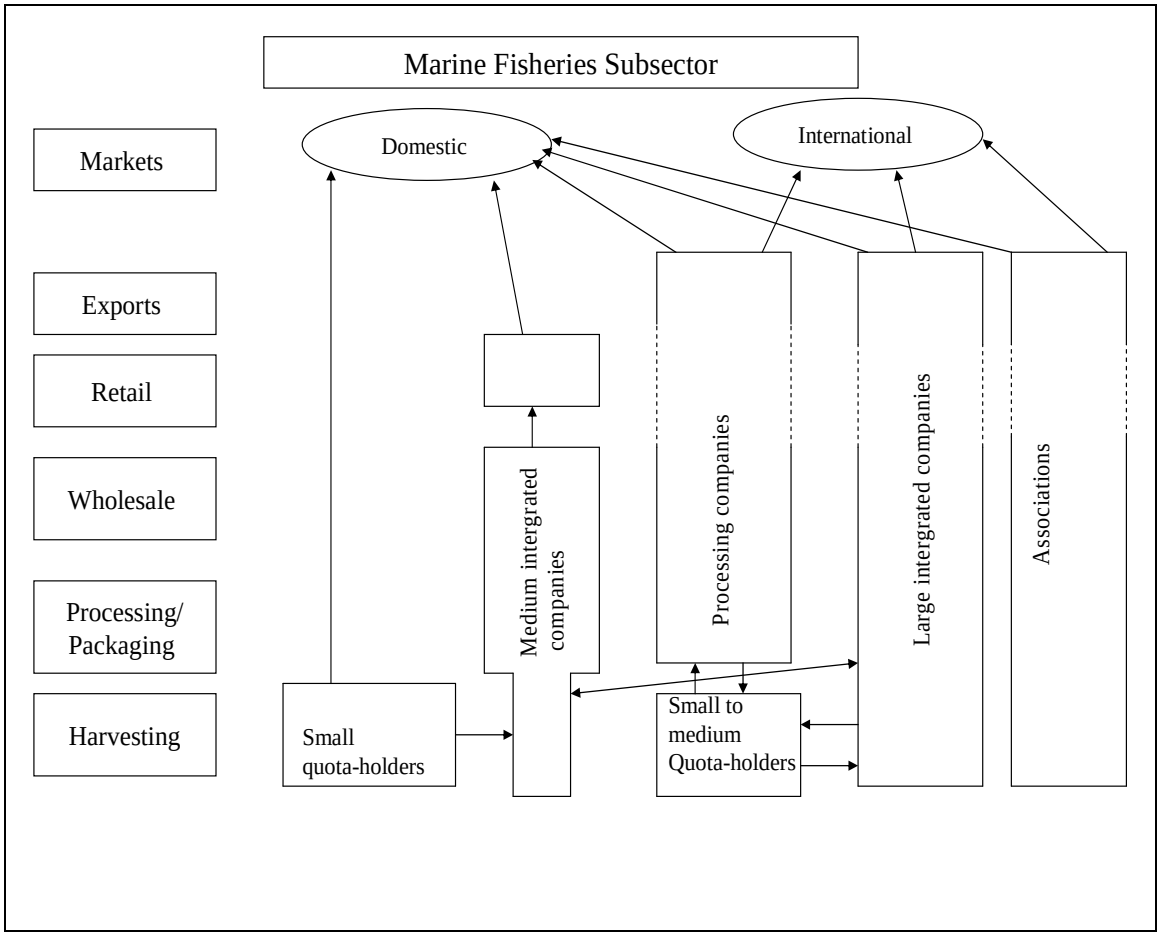

Figure 3: Sub-sector map

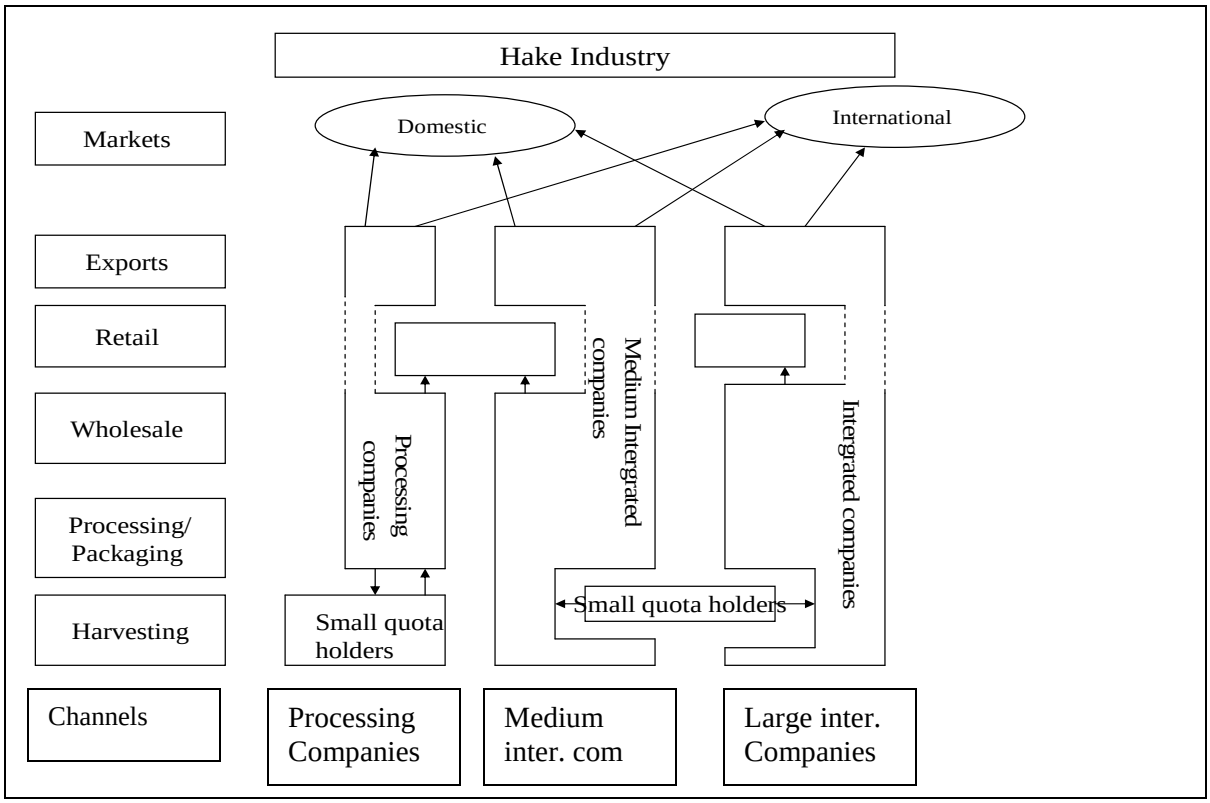

Figure 4: Hake sub sector map

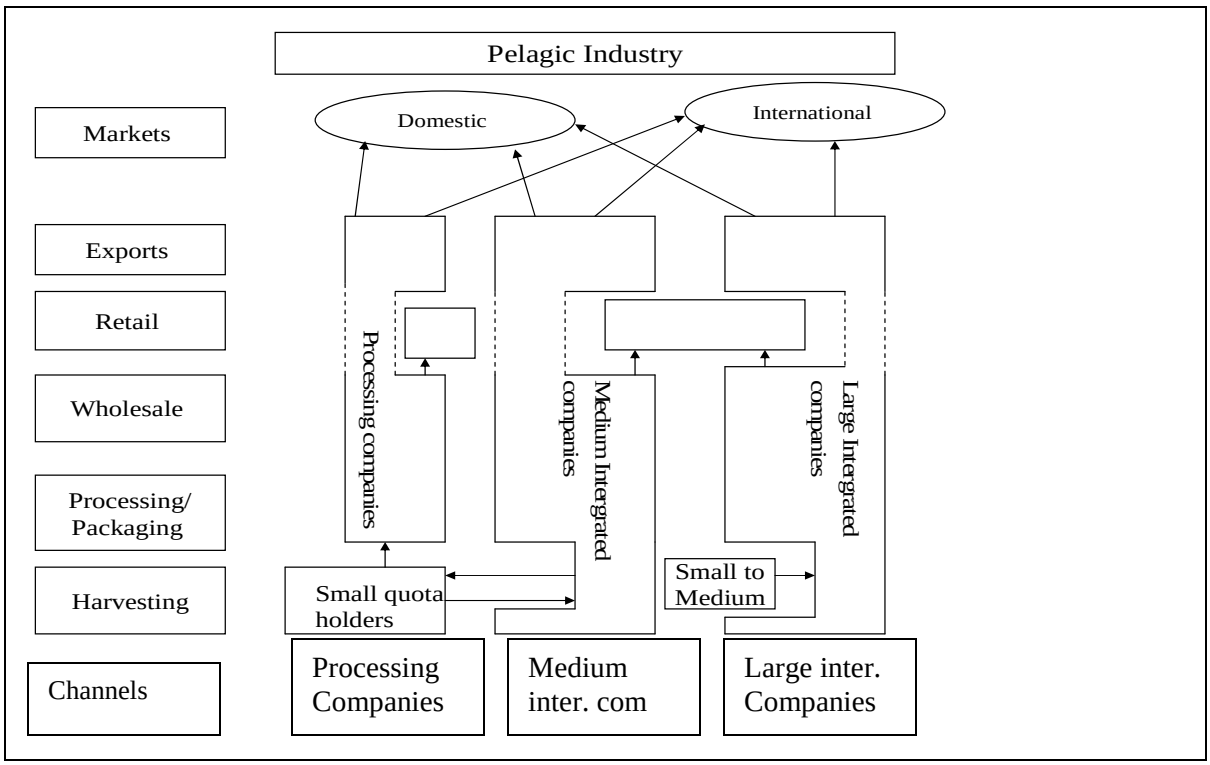

Figure 5: Pelagic subsector map

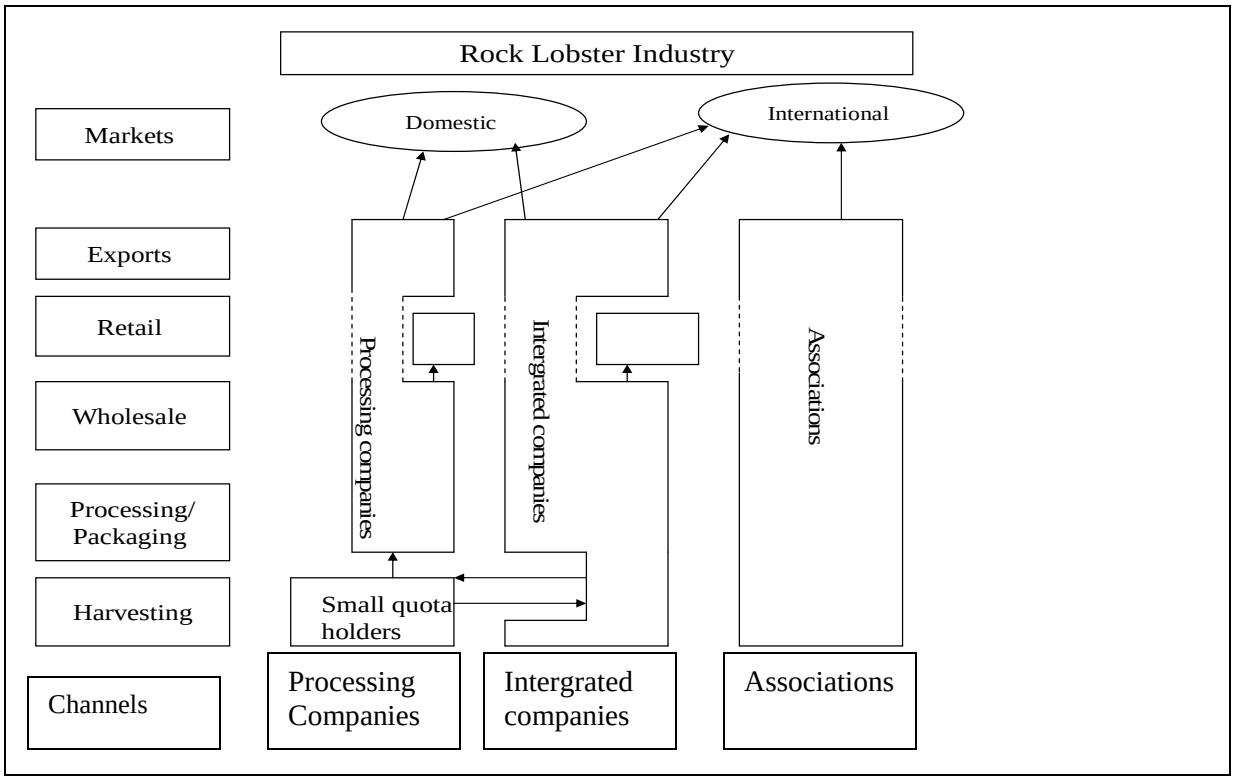

Figure 6: Rock Lobster Subsector map

6.1 Functions and Participants

Various functions take place from the harvesting/catching to consumer level in the marine fisheries. These functions are fulfilled by different participants, but in some instances the functions are performed by same enterprise as some of the participants are vertically integrated.

Harvesting/catching

Harvesting in fisheries is performed in different ways depending on the type of species being harvested and the permit allocated to the harvester. As there are more right-holders than vessels in the fishing industry, some vessels catch for more than one right holder based on joint venture agreements or on the basis of vessel hire.

The demersal hake fishery is divided into four categories: deep-sea trawl, inshore trawl, hake longline and hake handline. The deep-sea trawling targets two types of species, the deep water hake and the shallow water hake. Harvesting in the deep-sea trawl fishery is capital intensive. Although vessels as small as 30 metres operate in the fishery, the majority of the deep-sea trawlers are between 40 and 50 metres in length. Harvesting in the deep-sea trawlers is largely than by the big companies that are vertically intergrated. There are 53 right-holders with a minimum quota of 336 tons and maximum of 45 000 tons and it is estimated that 42 percent of the right-holders are SMMEs. The harvesting in the inshore trawl fishery is not as capital intensive as the deep-sea trawl fishery. The

inshore trawling targets the Cape hakes and the Agulhas sole. By 2004, there were 16 right-holders, and it is estimated that 69% of the right-holders are SMMES. Both the deep-sea and inshore trawl fisheries use the same method of fishing, which is a big net thrown in the water to catch fish.

The longline fishing uses a different method of catching fish, which is in the form of hooks. The fishery catches fish inshore and offshore. The inshore longlining is restricted to use of no more than 4 000 hooks per line and the offshore longlining is restricted to no more than 20 000 hooks per line. There are about 207 right-holders in this fishery and it is estimated that 80% are the SMMEs. The handline fishery operates inshore targeting Cape hake. The handline fishery is labour intensive and the fish are caught by handline or rod and Scarborough reels. There are about 86 right-holders and all are classified as SMMEs.

Just like the two trawl fisheries above, the horse mackerel is also capital intensive. The midwater trawling requires large vessels capable of sustaining deep-sea operation. The horse mackerel fishery also catches fish with the form of nets, just like the deep-sea and inshore hake trawlers. There is also a seasonal targeting of horse mackerel, which operates on smaller vessels such as a medium sized freezer (40-50m) and wetfish trawler (30-50m in length). By 2001, there were 21 right-holders.

The pelagic fishery targets two species, the pilchard and the anchovy. The pelagic fishery is capital intensive, in which investment has to be made in vessels. The species are caught in the form of nets. The larger traditional companies have their own fleets to fish. There are some right-holders who have no capital outlay in catching; as a result they get into agreements with big companies to utilize their quotas. There are also some small and medium companies that own vessels and factories. In 2003, there were about 113 right-holders of which 85 percent were SMMEs.

The traditional commercial line fishery is not capital intensive. It is boat-based activity and the vessels use hand line or rod-and-reel to target the species. The prawn trawl fishery is capital intensive and is dominated by established companies. The fishery requires specialized vessels and equipment. The vessels are large steel trawlers of 24 to 40 metres overall length. The trawler net sizes range from 25 to 60 metre toothrope length, with stretched mesh tapering from 70 milimetres in the wing to 38 milimetres in the cod-end. Trawling takes place on a 24-hour basis and remain at sea for two to three weeks at time. Rights are held by 5 companies.

South and West coast rock lobsters fisheries are capital intensive. Fishing for south coast rock lobster requires large steel-hulled ocean-going fishing boats (30-60m length) specifically rigged for longline trap-fishing. Each vessel hauls and resets approximately 2 000 traps per day in sets of 100 to 200 traps. The longline trap-fishing is labour intensive. There are about 18 right-holders. The west coast rock lobster is made up of the commercial and recreational fisheries. The recreational users may only fish using hoopnets from a boat or the shore. They are not allowed to sell their catch. With regards to the commercial wing, right-holders use larger, more sophisticated vessels. The right-

holders use a trap consisting of a rectangular metal frame covered by polyethylene netting, with a top or side entrance.

The tuna fishery is not capital-intensive, but locating and fishing tuna using the pole requires a skilled crew. Tuna is harvested using pole. The squid is operated by handlines, making this a labour-intensive fishery.

This function is performed by almost all individuals and companies that have fishing rights and quotas. Most of the HDEs perform this function only along the fisheries value-chain. The participants within this function can be categorized into three distinct groups in all the types of fisheries.

Large quota-holders: These are bigger companies such as I&J and Oceana, which are vertically intergrated and hold large quotas. They have invested huge sums of money in the industry and have their own fishing vessels.

Medium quota-holders: These are companies, which have their own vessels for specific fisheries and catch their quota of other species on joint ventures agreements with larger companies. Within this category, there are companies who also have their own processing plants. Some of these companies are individual quota-holders, while others are individual quota-holders pooled together to form one entity. In some cases smaller companies comprising of individual quota-holder pooled their resources together to invest in fishing vessels, which is a holding company of these smaller companies. The individual right-holder within companies pays R12/kg for the vessel during harvesting. Individuals and companies in this category take a risk in selling their catch as ownership of their catch ends after marketing. Some of the medium quota-holders deliver their catch directly to these large quota-holders.

Small quota-holders: These are individual quota-holders without fishing vessels. They rely on companies with fishing vessels to catch their quota on their behalf at cost (R12/kg). They do not have any agreement with the processors. The ownership of their catch ends immediately after delivering to the processors.

Processing/Packaging

Most of the vessels are equipped with onboard processing factory, packaging and freezing facilities or specially designed live fish holding facilities. Most of the companies are vertically integrated, but there are also firms that focus only on fish processing. Different species are processed differently and other species are processed at sea. There are large companies which own processing plants and at the same time individuals holding small quotas have pooled their rights to create medium-sized companies capable of investing in processing plants.

The deep-sea fleet lands product in three different categories, viz. fresh fish, frozen H&G and frozen skinned fillets. Fresh fish and frozen H&G undergo either primary or secondary processing in factories. The majority of small quota holders and new entrants who are in most cases the PDIs are reliant on the pioneer companies for the processing.

The entire inshore trawl hake catch is landed as ice fish. The bulk of the fish is processed in various forms.

Horse mackerel is a difficult species to process, most processing is done onboard. The catches of prawns are size-sorted, graded, packed and blast frozen at sea. Little value is added on land. The south coast rock lobster is frozen at sea and graded and repacked at shore-based facilities.

This function is performed by few companies. The participants within this function can be categorized into two distinct groups.

Large processors: These are the vertically intergrated companies (e.g. Oceana group, Premier Fishing and I&J). They process their catch as well as catches from other quota-holders that are in joint ventures agreements with them.

Small-Medium processors: These are companies with individual fishing rights and quotas, which have pooled their rights together to form a single entity. Through this entity they have invested into a processing plant, where they process their catch as well as catches from other smaller companies. Within this category, there are also processors, who are only involved in processing (they do not have fishing rights and quotas). There are also individual quota-holders who have invested in small processing plants.

Packaging of some species is done at the sea. Most of the packaging is done at the processing plants. This function is performed by the processors as explained above. They package their catch as well as catches from other small quota-holders, whom they charge R3/kg including processing.

Wholesale

Most fish is landed fresh and then immediately after processing marketed to local and international customers. The wholesaling function is carried out by processors for their catch and catches of other quota holders without processing equipments. Some small quota holders wholesale their catch at the landing site.

7. CONSTRAINTS AND OPPORTUNITIES

7.1 Constraints

There are constraints facing the fisheries sector, especially the SMMEs, which impact negatively on the growth of the overall sector. The following constraints are viewed as bottlenecks to increasing income generating opportunities and employment opportunities for all involved within the fisheries sector value chain.

Small quota size
Most of the HDEs are allocated small quotas, which act as barrier to access finance to purchase required fishing equipments including vessels.

One buyer arrangements
Some of the HDEs have a single buyer though a long term contract, who promised them that he/she will find market for them in Europe. Once the contracts have been signed the HDEs have no flexibility to sell to buyers with better offers.

Access to finance
This is linked to first constraints, small quota sizes. HDEs with smaller quotas find it very difficult to access finance due to the small quota allocated to them.

High start-up cost and lack of capital
Fishing is a very capital intensive sector and to be successful in this sector, one should have the necessary capital, which the HDEs lack. The start up cost in this industry is close to R1 million.

Rand/dollar exchange rate
With the unpredictable rand/dollar exchange rate, when the rand becomes stronger against the major currencies, these affect the revenues of the companies as their costs are in rand, but sells in the international markets in dollars.

7.2 Opportunities

Due to lack of capital inputs, the existing arrangements between small/or new entrants with larger companies should be promoted. Larger companies catch, processing and marketing on behalf of small companies based on their joint venture agreements.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Summary

The main objective of this scoping study was to find out what information is already available and at the same time to provide clarity on the organization of open sea and aquaculture components fisheries subsector.

In the following section, the key findings under each specific objective are briefly summarized.

- ***Determine the characteristics that differentiate enterprises that are given the rights and quotas to fish each of the 19 different species on the DEAT Marine and Coastal Management (M&CM) fishing license lists;***

When allocating rights and quotas the Department considers the following from an applicant:

- significantly be transformed in respect of both ownership and management;
- are not fronts for other companies; and
- have immediate access to a suitable vessel(s) and to the capital required to finance a specific fishery operation.
-

In addition to that right-holders that have not effected the transformation objectives to which they committed themselves in their previous applications and that have not invested or become involved in the fishery over their allocated period may be denied rights and quotas.

- ***Identify who has the rights and quotas for each species and the functions that each owner actually carries out ;***

Companies and individuals may obtain rights and quotas for specific species. Table 6 in the report gives the breakdown of right-holders within each fisheries and it also provides the percentage of SMMEs right holders.

- ***Describe the process and requirements to get marine fishing rights, licenses, and quotas; and aquaculture***

Obtaining a fishing rights, licences and quotas involves 9 steps, which were discussed in section 3 of the report. In summary the applicant needs to obtain an application, which needs to be filled and submitted to the MCM with supporting documents.

- ***Identify the different types of enterprises that are involved in the subsector;***

Few of the companies involved in the sector are vertically integrated and these are companies that have been in the industry for a long time (e.g. I&J and Oceana group). Most of the quota-holders participate only at the harvesting stage. Other quota-holders have are in joint venture agreements with big companies that catches, process and market their catch on their behalf.

- ***Identify the functions of the value chain, from production up to the markets;***

The fisheries sector comprises of five functions, viz: harvesting, processing, packaging, wholesale, retailing. The market of fish and fishery products consists of both domestic and international. The participants within each function are explained in section 6 above.

- ***Identify the main markets by type and location served by enterprises catching each different kind of species of fish;***

Companies with brand names such as I&J export their catch after processing and packaging to Europe and Asia. Small quota holders sell their catch locally as they have not yet established themselves in the international market. Other quota holders sell their catch through well established companies such as Oceana group and I&J.

- ***Identify where indigenous communities are involved in open sea fishing (physical location from N. Cape, W. Cape, E. Cape, and KZN) and the types of species they are allowed.***

The study was unable to capture this information. Communities that are involved in the marine fishing could not be established during the study.

8.2 Recommendations

The scoping study provided us with a better understanding of the fisheries industry in general. Most of the information provided in this report was sourced through literature review with some additional primary data from few participants within the industry.

Based on the secondary information sourced and few interviews conducted with the participants within the study, there are some actions that can be taken by PAL to assist the Historically Disadvantaged Enterprises within the industry.

- The partnerships between the vertically intergrated companies and the small quota holders should be encouraged. Presently, most of the HDEs do not have processing facilities to process their catch. They rely on the vertically intergrated companies and stand alone processors to process their catch.
- Presently, most of the quota holders are relying on the single buyer for their catch, hence they cannot bargain for better prices. PAL should assist the HDEs in finding markets for their catch.
- Most of the quota-holders who are HDEs have managed to pool their resources together with the hope of accessing finance to purchase vessels. PAL should assist these enterprises to source finance in guiding them to develop business plans.

The study further recommends a full sub-sector analysis study to be carried out along the coastal provinces to gather more information in details in order to get a better understanding of the whole sector.

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